Your Question Bank for class : xii || Computer Science || DATA STRUCTURE

1. Which of the following data structure is non-linear data structure?

A.Arrays

B. Linked lists

C.Trees

D.None of above

Answer : C

Description : Every data item is attached to several other data items in a way that is specific for reflecting relationships. The data items are not arranged in a sequential structure. Ex: Trees, Graphs

Category Code : 1

Edit this question

2. Which of the following data structure is linear data structure?

A.Trees

B. Graphs

C. Arrays

D.none of the above

Answer : C

Description : A linear data structure traverses the data elements sequentially, in which only one data element can directly be reached. Ex: Arrays, Linked Lists

Category Code : 1

Edit this question

3. The operation of processing each element in the list is known as

A.Sorting

B. Merging

C. Inserting

D.Traversal

Answer : D

Description : Traversal can be termed as process of visiting data elements in the list and help in accessing the element

Category Code : 1

Edit this question

4. Finding the location of the element with a given value is:

A. Traversal

B. Search

C. Sort

D.None of above

Answer : B

Description : Search helps in finding the location the element in the list by traversing the list

Category Code : 1

Edit this question

5. Arrays are best data structures

A. for relatively permanent <bền vững> collections of data

B.for the size of the structure and the data in the structure are constantly changing

C. for both of above situation

D. for none of above situation

Answer : A

Description :

Category Code : 1

Edit this question

6. Linked lists are best suited

A. for relatively permanent collections of data

B.for the size of the structure and the data in the structure are constantly changing

C. for both of above situation

D. for none of above situation

Answer : B

Description :

Category Code : 1

Edit this question

7. Each array declaration need not give, implicitly <sự ẩn ý> or explicitly<tính rõ ràng>, the information about

A. the name of array

B.the data type of array

C. the first data from the set to be stored

D. the index set of the array

Answer : C

Description :

Category Code : 1

Edit this question

8. The elements of an array are stored successively in memory cells because

A. by this way computer can keep track only the address of the first element and the addresses of other elements can be calculated

B. the architecture of computer memory does not allow arrays to store other than serially

C. both of above

D.none of above

Answer : A

Description :

Category Code : 1

Edit this question

9. The memory address of the first element of an array is called

A. floor address

B. foundation address

C. first address

D. base address

Answer : D

Description :

Category Code : 1

Edit this question

10. The memory address of fifth element of an array can be calculated by the formula

A. LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array

B. LOC(Array[5])=Base(Array[5])+(5-lower bound), where w is the number of words per memory cell for

the array

C. LOC(Array[5])=Base(Array[4])+(5-Upper bound), where w is the number of words per memory cell for the array

D. None of above

Answer : A

Description :

Category Code : 1

11. Which of the following data structures are indexed structures?

A. linear arrays

B. linked lists

C. both of above

D. none of above

Answer : A

Description :

Category Code : 1

Edit this question

12. Which of the following is not the required condition for binary search algorithm?

A.The list must be sorted

B.there should be the direct access to the middle element in any sublist

C. There must be mechanism to delete and/or insert elements in list

D. none of above

Answer : C

Description :

Category Code : 1

Edit this question

13. Which of the following is not a limitation of binary search algorithm?

A. must use a sorted array

B. requirement of sorted array is expensive when a lot of insertion and deletions are needed

C. there must be a mechanism to access middle element directly

D. binary search algorithm is not efficient when the data elements are more than 1000.

Answer : D

Description :

Category Code : 1

Edit this question

14. Two dimensional arrays (mảng 2 chiều) are also called

A. tables arrays

B. matrix arrays

C. both of above

D. none of above

Answer : B

Description :

Category Code : 1

Edit this question

15. A variable P is called pointer if

A. P contains the address of an element in DATA

B.P points to the address of first element in DATA

C.P can store only memory addresses

D. P contain the DATA and the address of DATA

Answer : A

Description :

Category Code : 1

Edit this question

16. Which of the following data structure can't store the non-homogeneous data elements? <ko thể cấu trúc dữ liệu không đồng nhất>

A. Arrays

B. Records

C. Pointers

D. None

Answer : A

Description :

Category Code : 1

Edit this question

17. Which of the following data structure store the non-homogeneous data elements? <cấu trúc dữ liệu không đồng nhất>

A.Arrays

B. Records

C.Pointers

D.None

Answer : B

Description :

Category Code : 1

Edit this question

18. Each data item in a record may be a group item composed of sub-items; those items which are indecomposable <không thể phân tích được> are called

A.elementary items

B.atoms

C. scalars

D. all of above

Answer : D

Description :

Category Code : 1

Edit this question

19. The difference between linear array and a record is

A. An array is suitable for homogeneous data but the data items in a record may have different data type

B. In a record, there may not be a natural ordering in opposed to linear array.

C. A record form a hierarchical structure but a linear array does not

D. All of above

Answer : D

Description :

Category Code : 1

Edit this question

20. Which of the following statements is false?

A.Arrays are dense <dày đặc> lists and static data structure

B.data elements in linked list need not be stored in adjacent space in memory

C. pointers store the next data element of a list <con trỏ trỏ đến thành phần dữ liệu tiếp theo trong list>

D. linked lists are collection of the nodes that contain information part and next pointer

Answer : C

Description :

Category Code : 1

21. Binary search algorithm cannot be applied to

A. sorted linked list

B. sorted binary trees

C.sorted linear array

D. pointer array

Answer : B

Description :

Category Code : 1

Edit this question

22. When new data are to be inserted into a data structure, but there is no available space; this situation is usually called

A. underflow

B.overflow

C.housefull

D. saturated

Answer : B

Description :

Category Code : 1

Edit this question

23. The situation when in a linked list START=NULL is

A. underflow

B. overflow

C. housefull

D. saturated

Answer : A

Description :

Category Code : 1

Edit this question

24. Which of the following is two-way list?

A.grounded header list

B.circular header list

C. linked list with header and trailer nodes

D.doubly linked list

Answer : D

Description :

Category Code : 1

Edit this question

25. The term "push" and "pop" is related to the

A.array

B. lists
C. stacks
D. all of above

Answer : C

Description :

Category Code : 1

Edit this question

26. A data structure where elements can be added or removed at either end but not in the middle

A.Linked lists

B.Stacks

C.Queues

D.Deque

Answer : D

Description :

Category Code : 1

Edit this question

27. When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return

A. FAEKCDBHG

B. FAEKCDHGB

C.EAFKHDCBG

D.FEAKDCHBG

Answer : B

Description :

Category Code : 1

Edit this question

28. Which data structure allows deleting data elements from front and inserting at rear?

A.Stacks

B. Queues

C. Deques

D. Binary search tree

Answer : B

Description :

Category Code : 1

Edit this question

29. Identify the data structure which allows deletions at both ends of the list but insertion at only one end

A. Input-restricted deque

B. Output-restricted deque

C. Priority queues

D. None of above

Answer : A

Description :

Category Code : 1

Edit this question

30. Which of the following data structure is non-linear type?

A. Strings

B. Lists

C. Stacks

D. None of above

Answer : D

Description :

Category Code : 1

31. Which of the following data structure is linear type?

A. Strings

B. Lists

C. Queues

D. All of above

Answer : D

Description :

Category Code : 1

Edit this question

32. To represent hierarchical relationship between elements, which data structure is suitable?

A. Deque

B. Priority

C. Tree

D.All of above

Answer : C

Description :

Category Code : 1

Edit this question

33. A binary tree whose every node has either zero or two children is called

A. Complete binary tree

B. Binary search tree

C. Extended binary tree

D. None of above

Answer : C

Description :

Category Code : 1

Edit this question

34. The depth of a complete binary tree is given by

A. Dn = n log2n

B.Dn = n log2n+1

C.Dn = log2n

D. Dn = log2n+1

Answer : D

Description :

Category Code : 1

Edit this question

35. When representing any algebraic expression E which uses only binary operations in a 2-tree,

A. the variable in E will appear as external nodes and operations in internal nodes

B. the operations in E will appear as external nodes and variables in internal nodes

C. the variables and operations in E will appear only in internal nodes

D. the variables and operations in E will appear only in external nodes

Answer : A

Description :

Category Code : 1

Edit this question

36. A binary tree can easily be converted into á 2-tree

A. by replacing each empty sub tree by a new internal node

B.by inserting an internal nodes for non-empty node

C. by inserting an external nodes for non-empty node

D. by replacing each empty sub tree by a new external node

Answer : D

Description :

Category Code : 1

Edit this question

37. When converting binary tree into extended binary tree, all the original nodes in binary tree are

A. internal nodes on extended tree

B. external nodes on extended tree

C. vanished on extended tree

D. None of above

Answer : A

Description :

Category Code : 1

Edit this question

38. The post order traversal of a binary tree is DEBFCA Find out the pre order traversal

A.ABFCDE

B. ADBFEC

C. ABDECF

D. ABDCEF

Answer : C

Description :

Category Code : 1

Edit this question

39. Which of the following sorting algorithm is of divide-and-conquer type?

A. Bubble sort

B. Insertion sort

C. Quick sort

D. All of above

Answer : C

Description :

Category Code : 1

Edit this question

40. An algorithm that calls itself directly or indirectly is known as

A. Sub algorithm

B. Recursion

C. Polish notation

D. Traversal algorithm

Answer : B

Description :

Category Code : 1

51. Value of the first linked list index is _____

A. One

B. Zero

C. -1

D. None of these

Answer : B

Description :

Category Code : 1

Edit this question

52. A linked list index is ____ that represents the position of a node in a linked list.

A. an Integer

B.a variable

C. a character

D. a boolean

Answer : A

Description :

Category Code : 1

Edit this question

53. Why is the constructor of the LinkedList class empty?

A. because initialization of data members of the LinkedList class is performed by the constructor of the LinkedList class.

B. because initialization of data members of the LinkedList class is performed by the destructor of the LinkedList class.

C. because initialization of data members of the QueueLinkedList class is performed by the constructor of the LinkedList class.

D. because initialization of data members of the QueueLinkedList class is performed by the destructor of the LinkedList class

Answer : A

Description :

Category Code : 1

Edit this question

54. _____ form of access is used to add and remove nodes from a queue

A. LIFO,Last In First Out

B. FIFO , First In First Out

C. Both (a) and (c)

D. None of these

Answer : B

Description :

Category Code : 1

Edit this question

55. _____ form of access is used to add and remove nodes from a stack

A. LIFO

B.FIFO

C. Both (a) and (b)

D. None of these

Answer : A

Description :

Category Code : 1

Edit this question

56. New nodes are added to the _____ of the queue.

A.front

B.back

C.middle

D.Both 1 and 2

Answer : B

Description :

Category Code : 1

Edit this question

57. A _____ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.

A. queue linked list

B.stacks linked list

C. both of them

D. neither of them

Answer : A

Description :

Category Code : 1

Edit this question

58. In an array queue, data is stored in an _____ element.

A.Node

B.linked list

C.array

D.constructor

Answer : C

Description :

Category Code : 1

Edit this question

59. The pop() member function determines if the stack is empty by calling the _____ member function

A. removeback()

B.isEmpty()

C.removedfront()

D.hasNext()

Answer : B

Description :

Category Code : 1

Edit this question

60. What happens when you push a new node onto a stack?

A. the new node is placed at the front of the linked list.

B. the new node is placed at the back of the linked list.

C. the new node is placed at the middle of the linked list.

D. No Changes happens

Answer : A

Description :

Category Code : 1

41.

In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called

A. Leaf

B. branch

C. path

D. thread

Answer : D

Description :

Category Code : 1

Edit this question

42. The in order traversal of tree will yield a sorted listing of elements of tree in

A.Binary trees

B.Binary search trees

C. Heaps

D. None of above

Answer : B

Description :

Category Code : 1

Edit this question

43. In a Heap tree

A.Values in a node is greater than every value in left sub tree and smaller than right sub tree

B.Values in a node is greater than every value in children of it

C. Both of above conditions applies

D. None of above conditions applies

Answer : B

Description :

Category Code : 1

Edit this question

44. In a graph if e=[u, v], Then u and v are called

A.endpoints of e

B.adjacent nodes

C. neighbors

D. all of above

Answer : D

Description :

Category Code : 1

Edit this question

45. A connected graph T without any cycles is called

A.a tree graph

B.free tree

C. a tree

D. All of above

Answer : D

Description :

Category Code : 1

Edit this question

46. In a graph if e=(u, v) means

A.u is adjacent to v but v is not adjacent to u

B.e begins at u and ends at v

C. u is processor and v is successor

D. both b and c

Answer : D

Description :

Category Code : 1

Edit this question

47. If every node u in G is adjacent to every other node v in G, A graph is said to be

A. isolated

B.complete

C. finite

D.strongly connected

Answer : B

Description :

Category Code : 1

Edit this question

48. The complexity of linear search algorithm is

A.O(n)

B.O(log n)

C.O(n2)

D. O(n log n)

Answer : A

Description :

Category Code : 1

Edit this question

49. The complexity of merge sort algorithm is a.

A. O(n)

B.O(log n)

C.O(n2)

D.O(n log n)

Answer : D

Description :

Category Code : 1

Edit this question

50. Which of the following case does not exist in complexity theory

A.Best case

B.Worst case

C.Average case

D.Null case

Answer : D

Description :

Category Code : 1

61. What happens when you push a new node onto a stack?

A.the new node is placed at the front of the linked list.
B.the new node is placed at the back of the linked list.
C.the new node is placed at the middle of the linked list.
D.No Changes

Answer : A

Description :

Category Code : 1

Edit this question

62. A Linked list can grow and shrink in size dynamically at _____

A.Beginning
B.run time
C.Ending
D.none of the above

Answer : B

Description :

Category Code : 1

Edit this question

63. What member function places a new node at the end of the linked list?

A.appendNode()
B.addNode()
C.displayNode()
D.structNode()

Answer : A

Description :

Category Code : 1

Edit this question

64. The _____ function retrieves the value of the size member of the LinkedList class

A.getSize()
B.giveSize()
C.seeSize()
D.addSize()

Answer : A

Description :

Category Code : 1

Edit this question

65. Elements of an array are stored _____ in memory

A.Periodical
B.Sequentially
C.Parallelly

D.None of the above

Answer : B

Description :

Category Code : 1

Edit this question

66. Each entry in a linked list is called a _____

A.Link
B.Node
C.data structure
D.array index

Answer : A

Description :

Category Code : 1

Edit this question

67. How many parts are there in a declaration statement?

A.1
B.2
C.3
D.4

Answer : C

Description :

Category Code : 1

Edit this question

68. _____ is the way you group things together by placing one thing on top of another and then removing things one at a time from the top

A.Array

B.Stack
C.Pointer
D.All of the above

Answer : B

Description :

Category Code : 1

Edit this question

69. Pushdown list means:

A.Stack

B.Queue

C.Linked list

D. All of the above

Answer : D

Description :

Category Code : 1

Edit this question

70. Which of the following is the feature of stack?

A.All operations are at one end

B.It cannot reuse its memory

C.All elements are of different data types

D.Any element can be accessed from it directly

Answer : A

Description :

Category Code : 1

71. The five items: A, B, C, D and E are pushed in a stack, one after the other starting from A. The stack is popped four times and each

element is inserted in a queue. Then two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack.
The popped item is.

A.A
B.B
C.C
D.D

Answer : D

Description :

Category Code : 1

Edit this question

72. To delete a dynamically allocated array named ‘a’, the correct statement is

A.delete a;

B.delete a[0];

C.delete []a;

D.delete [0]a;

Answer : A

Description :

Category Code : 1

Edit this question

73. To create a linked list, we can allocate space and make something point to it, by writing:
struct-name *pointer-variable;
Which of the following statement will correctly allocate the space

A.pointer-variable = malloc(sizeof(*struct-name));

B.pointer-variable = malloc(sizeof(struct struct-name));

C.
pointer-variable = alloc(sizeof(struct struct-name));
D.pointer-variable = alloc(sizeof(*struct-name));

Answer : B

Description :

Category Code : 1

Edit this question

74. The size of a structure can be determined by
a. size of variable name
b. size of (struct tag)

A.Only a
B.Only b
C.Both a and b
D.None of these options

Answer : C

Description :

Category Code : 1

Edit this question

75. The reason for using pointer is ...
Choose the false option from the following sentences

A.Accessing arrays or string elements

B.Dynamic memory allocation

C.Implementing linked list,trees,graphs and many other data structures

D.All are false

Answer : A

Description :

Category Code : 1